National Aeronautics and

Space Administration

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SENSITIVE

NASA-STD-2804E
January 23, 2001

MINIMUM INTEROPERABILITY SOFTWARE SUITE

NASA TECHNICAL STANDARD

FOREWORD

This standard is approved for use by NASA Headquarters and all NASA Centers and is intended to provide a common framework for consistent practices across NASA programs.

The material covered in this standard is based on the consensus judgment of the NASA Chief Information Officers (CIO) Board and the NASA IT Investment Council. The purpose of this standard is to establish the minimum workstation software suite required to support interoperability, establish interface and product standards for components of the software suite operating on PC or MAC, and establish reporting metrics for determining overall NASA interoperability.

Requests for information, corrections, or additions to this standard should be directed to the John Glenn Research Center (GRC), the Principal Center for Workgroup Hardware and Software, Code 7100, MS 142-2, Cleveland, OH, 44135 or to pcwhs-comments@grc.nasa.gov. Requests for general information concerning standards should be sent to NASA Technical Standards Program Office, ED41, MSFC, AL, 35812 (telephone 256-544-2448). This and other NASA standards may be viewed and downloaded, free-of-charge, from our NASA Standards Homepage: http://standards.nasa.gov.

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Chief Information Officer

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CONTENTS

TABLES

MINIMUM OFFICE AUTOMATION SOFTWARE SUITE INTERFACE STANDARDS AND PRODUCT STANDARDS

1.   SCOPE

1.1   Purpose and Scope. This standard establishes the minimum software suite required to support interoperability, establish interface and product standards for components of the software suite operating on PC or MAC, and establish reporting metrics for determining overall NASA interoperability.

Software standards for UNIX platforms are addressed by NASA STD-2810, *UNIX Interoperability.*

1.2   Applicability. All Center CIO's will ensure that all NASA employees have access to an interoperable workstation that is equipped with the following minimum software suite that meets the standards in Section 3 below:

    Word Processing
    Spreadsheet
    Presentation
    Electronic Mail
    Calendar/Scheduling
    Other Software Suite
    IFMP Software Suite

For the functions (components) identified with standard products, future procurements to support interoperability are restricted to these products and enterprise applications. Licenses for other products may not be renewed. Additional products will be added as required.

2.   ACRONYMS AND DEFINITIONS

2.1	CIO	Chief Information Officer
2.2	COTS	Commercial "Off-the-Shelf" product
2.3	FTP	File Transfer Protocol
2.4	GIF	Graphics Interchange Format
2.5	HTML	HyperText Markup Language
2.6	ICE	Integrated Cryptographic Engine
2.7	IFMP	Integrated Financial Management Program
2.8	JPEG	Joint Photographic Experts Group
2.9	MIME	Multipurpose Internet Mail Extension
2.10	PDF	Portable Document Format
2.11	PKI	Public Key Infrastructure
2.12	QT	QuickTime
2.13	SMTP	Simple Mail Transport Protocol
2.14	TCP/IP	Transmission Control Protocol/Internet Protocol
2.15	WHS	Workgroup Hardware and Software

3.   DETAILED REQUIREMENTS

   3.1   <u>Architectural Compliance Requirements</u>. NASA has baselined and approved an initial NASA Integrated Information Technology Architecture. The architecture is predicated on selecting standards for a broad and cost-effective infrastructure that provides for reliance on commercial off-the-shelf products as much as possible; interoperability both within and external to NASA; flexibility for future growth; and consistency with generally accepted consensus standards as much as feasible. Among these objectives, interoperability is one of NASA's most critical issues related to information technology.

At times, it is in NASA's best interest to specify commercial products as standards for an interoperable implementation of a particular set of related and integrated functions. In those instances, there are often other embedded functions or proprietary extensions within those products whose use may create higher-level interoperability conflicts when embedded in an application system that transcends basic interoperability. **For that reason, NASA Centers and programs are advised to apply appropriate caution to the use of proprietary or non-standard extensions, features and functions of hardware or software that go beyond the standard functionality.**

   3.2   <u>Interface and Product Standards</u>. The following standards are established for the components of the office automation software suite:

Component	Interface Standard	Product Standard[1]
Word Processing	MSWord 97/98 File	Word
Spreadsheet	Excel 97/98 File	Excel
Presentation	PowerPoint 97/98 File	PowerPoint
Electronic Mail	SMTP/NASA MIME Profile	MS Outlook, Eudora Pro, Netscape Messenger
PDF Viewer	PDF version 1.3 File	Adobe Acrobat Reader (4.0) or other comparable PDF viewer
Web Browser	Procured or internally developed applications must work with both Netscape Communicator/Navigator (4.75) and Internet Explorer (5.0) on all interoperable desktops	Netscape Communicator/Navigator MS Internet Explorer (128-bit)
Calendar/Scheduling	vCAL[2]	None[3]
Other Software Components	See Tables I and II	See Tables I and II

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[1] Product standards shall be Y2K compliant versions. Additionally, products procured six months or more after the Final Rule for Section 508 is published must adhere to Section 508 requirements as expressed in the Final Rule.
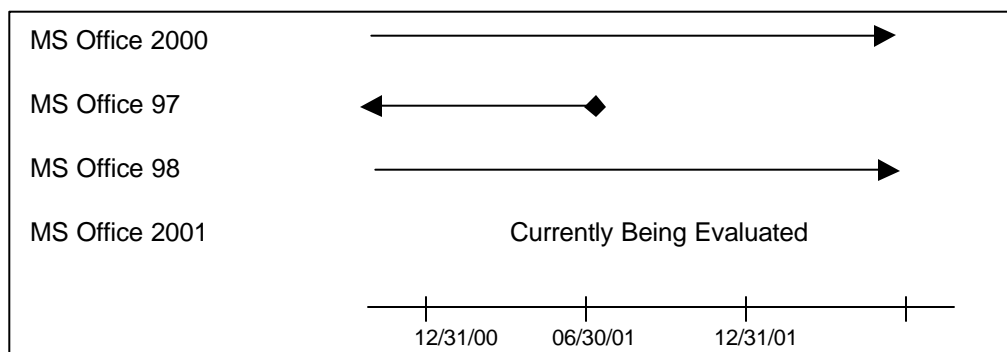
[2] Limited interoperability provided by this interface standard

[3] All Center CIO's are responsible for providing an interoperable calendar/scheduling solution within their Centers.
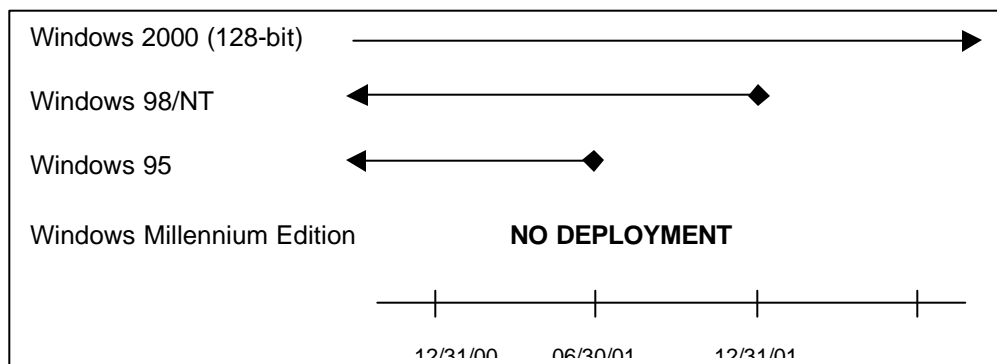
3.3   Microsoft Office Compliance Dates. Microsoft Office deployment deadlines for all NASA Interoperable PCs and Macs are as follows:

MS Office 2000 (PC) shall be deployed by June 30, 2001
MS Office 97 (PC) shall be removed by June 30, 2001
MS Office 98 (Mac) is the current standard until further notice
MS Office 2001 (Mac) is currently under evaluation

MS Office 2000	————————————————→
MS Office 97	←————————◆
MS Office 98	————————————————→
MS Office 2001	Currently Being Evaluated
	├———————├———————├———————├
	12/31/00 06/30/01 12/31/01

3.4   Operating System Standards and Compliance Dates. Operating system deployment deadlines for all NASA Interoperable PCs and Macs are as follows:

Windows 2000 (128-bit) shall be deployed by December 31, 2001
Windows 98/NT shall be removed by December 31, 2001
Windows 95 shall be removed by June 30, 2001
Windows ME shall not be deployed

Windows 2000 (128-bit)	————————————————→
Windows 98/NT	←————————————◆
Windows 95	←————————◆
Windows Millennium Edition	**NO DEPLOYMENT**
	├———————├———————├———————├
	12/31/00 06/30/01 12/31/01

MacOS 9 is the current operating system standard until further notice
MacOS 8.6 shall be removed by June 30, 2001
Pre MacOS 8.6 shall be removed immediately
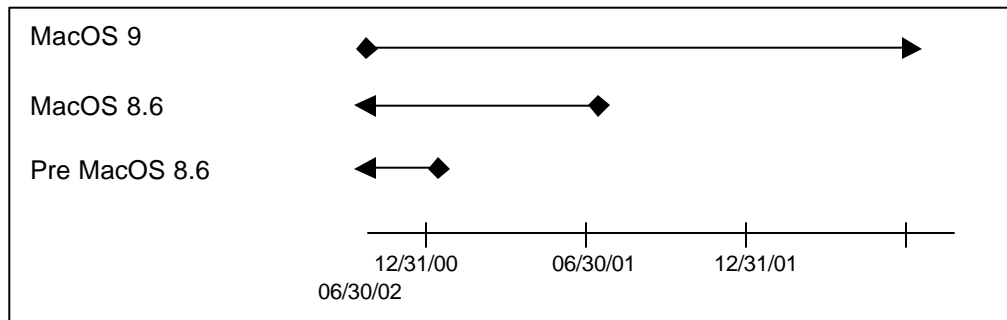
3.5   Future Interface and Product Standards. The Workgroup Hardware and Software (WHS) Principal Center is working to ensure interoperability at the highest possible revision of products included in the interoperability software suite.

4.   REVIEW AND REPORTING REQUIREMENTS

4.1   Interoperability Implementation Reporting. Each Center CIO will provide the NASA CIO with an annual progress report, outlining the progress in achieving minimum interoperability access for each NASA employee.

4.2   Interoperability Reporting. Each Center CIO will establish the necessary processes and tools, both manual and automated, to report on an annual basis to the NASA CIO the hardware and software configuration of all workstations and file servers at their respective Centers. These data will contain sufficient information to ascertain if the workstation or server supports NASA employees or is Government-furnished equipment to a contractor, whether the equipment is required to be interoperable, and a description of the hardware architecture/ environment. The report will specify the number of NASA employees that do not have access to interoperable workstations.

4.3   Interface and Product Standards Review Reporting. The Principal Center for WHS will review this standard on an as-required basis, not to exceed 6-month intervals. Office automation software standards will be updated as required.

5.   DURATION

5.1   Duration. This standard will remain in effect until canceled or modified by the NASA CIO.

6.   SUPPORTING DOCUMENTS

6.1   Supporting Documents. The supporting documents for this technical standard are as follows:
Windows 2000 Trusted Host (Security) Compliance Guidelines
Windows 2000 Interoperability Compliance Guidelines
NASA / Windows 2000 Position Paper

NASA / Office Suite Position Paper
NASA-STD-2804E Compendium
NASA-STD-2805D Minimum Hardware Configurations
NASA-STD-2805D Compendium

These documents can be found at http://www.grc.nasa.gov/WWW/LeadCenter/LCdocs/2804-docs/

TABLE I. Other Software - *Windows 95/98/2000/NT Systems*

Feature	Product	Minimum Version	Software Status
Telnet Client	Bundled	Win 95/98/2000/NT	Optional
Secure SHell Client[4]	putty	0.50 beta	Optional
FTP Client	WS_FTP	LE 5.06	Recommended
3270 Client	QWS3270	2.7	Optional
News Reader	See Web Browser in Section 3.2		
GIF Viewer	See Web Browser in Section 3.2		
JPEG Viewer	See Web Browser in Section 3.2		
QT Movie Player	QuickTime	4.1.2	Recommended
ZIP Extractor	WinZip	8.0	Recommended
Anti-Virus	Norton Anti-Virus	7.5	Recommended
Windows Remote Display	ICA	6.00.919	Optional
X Window System Server	Exceed	7.0	Optional
Network File System Client	Maestro	7.0	Optional
Internet Audio/Video Player	RealPlayer	Basic 8	Recommended
PostScript Interpreter	GhostScript	6.01	Optional
PDF Generator	Adobe Acrobat Full Suite	4.05	Optional
Public Key Infrastructure[5]	Entrust Entelligence	5.0.1	Recommended[6]

Legend:

Recommended   Specified **FEATURE** required for Interoperable Workstations. Product is recommended, but a compatible product may be used at the discretion of the Center CIO. *Where applicable, products must be Winsock TCP/IP compliant.*

Optional   Capabilities not required for workstation interoperability but useful if functionality is required.

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[4] An ssh client that supports ssh protocol version 2 is recommended
[5] Please see Table III for additional PKI information.
[6] If this feature is needed, the specified product is required.

TABLE II. Other Software - *Mac Systems*

Feature	Product	Minimum Version	Software Status
Secure SHell Client[47]	Nifty Telnet SSH	1.2 SSH r3	Optional
FTP Client	Fetch	3.03	Recommended
3270 Client	TN3270	2.5b5	Optional
News Reader	See Web Browser in Section 3.2		
GIF Viewer	See Web Browser in Section 3.2		
JPEG Viewer	See Web Browser in Section 3.2		
QT Movie Player	QuickTime	4.1	Recommended
HQX Extractor	Stuffit Expander	5.5	Recommended
Anti-Virus	Norton Anti-Virus	7.0	Recommended
Windows Remote Display	ICA	4.10.036	Optional
X Window System Server	eXodus	7.1	Optional
Network File System Client	Intragy Access	1.0.1	Optional
Internet Audio/Video Player	RealPlayer	Basic 8	Recommended
Postscript Interpreter	MacGS	5.50	Optional
PDF Generator	Adobe Acrobat Full Suite	4.05	Optional
Public Key Infrastructure	Entrust Entelligence	5.0	Recommended[6]

Legend:

Recommended   Specified **FEATURE** required for Interoperable Workstations. Product is recommended, but a compatible product may be used at the discretion of the Center CIO. *Where applicable, products must be Open Transport compliant.*

Optional   Capabilities not required for workstation interoperability but useful if functionality is required.

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[7] Nifty Telnet SSH supports protocol version 1.

TABLE III. PKI Plug-Ins

The Principal Center for IT Security has tested and released the following versions of Entrust for use.

PC	Mac	Works with:
Entelligence - 5.0.1, service pack 3	Entelligence - 5.0	
Express for Eudora - 4.1a	Express for Eudora - 5.0	Eudora 4.x and above (PC) Eudora 4.1 and above (Mac)
Express for Outlook - 5.0.1, service pack 3		Outlook 97/98/2000
ICE(with True Delete) - 5.0.1, service pack 3		
Direct client - 5.0.1, service pack 3	Direct client - 5.0	Netscape Navigator 3.01, 3.04 Netscape Communicator 4.01, 4.04, 4.05, 4.07, 4.08, 4.5 Microsoft Internet Explorer 3.02, 4.0, 4.01
Direct server - 5.0		